

Horizon-Europe Project ReMuNet and other EU Research Activities of FIR at RWTH Aachen University

Successful R&I in Europe 2024, February 15th, 2024

John von Stamm



At FIR we do interdisciplinary research to develop digitally connected, human-centric organisations and drive industrial twin transition



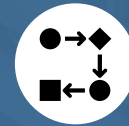
Our Vision:
*Empower the organisation
of the future!*



Conceptualization of resilient and sustainable business ecosystems



Industry-oriented product-service systems and business models



Production processes and logistics



Digital enterprise architectures

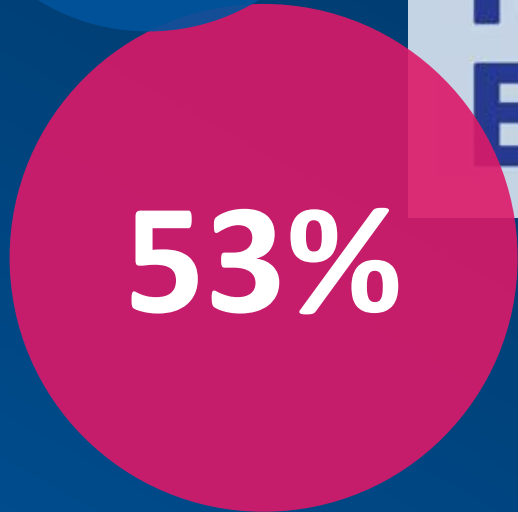


Urban mobility concepts and new work systems



Infrastructure for experimental research and prototyping

At FIR we have years of experience in EU project management



**Proposal
success rate**



**Proposals
submitted**



**Projects
granted**



Coordinations



Introducing EU-Horizon Project

ReMuNet – Resilient Multimodal Freight Transport Network



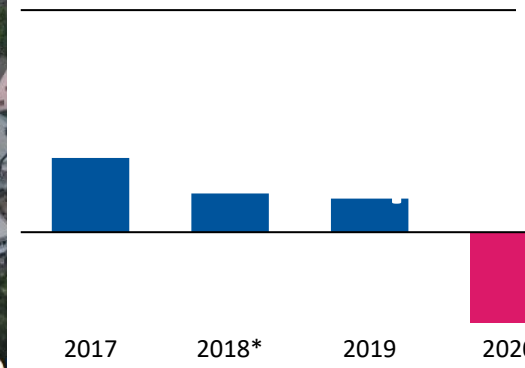
Funded by
the European Union



In recent years supply chains have been extremely disrupted across Europe



European Union: Change in the value of exports, in % compared to the previous year¹



The ship that blocked the Suez canal may be free, but experts say supply chain impact could be serious

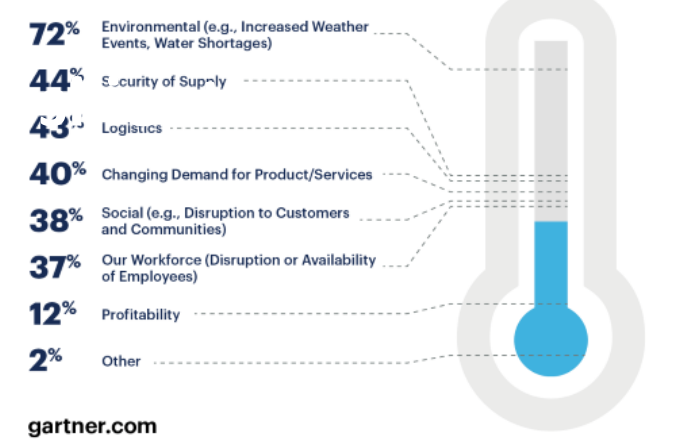
Analysis
 How the Suez canal blockage could impact supply chains
 Gwyn T... You can read this article in 2 minutes

EDITORS' PICK
 New China Lockdown, Ukraine Conflict, Another Wave Of Supply Chain Issues

Dwell times and fuel rates increase due to Russia sanctions

The current war that has been unleashed on Ukraine by Russia has caused massive disruptions to trade. Since 17th February, transhipment dwell times in European ports has increased by 43% according to data from FourKites.

Climate Change Impact Areas in Supply Chain



Economic more...

eurostat

Published on 22-04-2018 at 08:00

The coronavirus and logistics in crisis mode
 PwC's analysis of the latest developments and alliances in the transport and logistics industry

OCEANSIDE LOGISTICS LTD

Food Supply Wrecks

gartner.com

n = 124
 Source: 2022 Gartner Emerging Priorities in Supply Chain Survey
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Gartner

In ReMuNet 23 international partners are working on increasing the resilience and sustainability of European freight transport

Intermodal & International

Funding amount:

4 Mio €



Road

Duration:

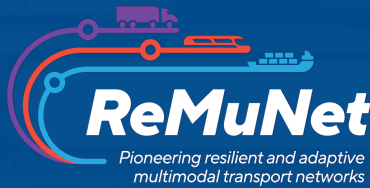
07/23-07/26



Rail



Barge



Transport time



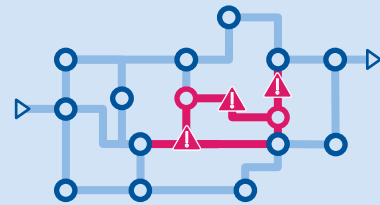
Resilience increase



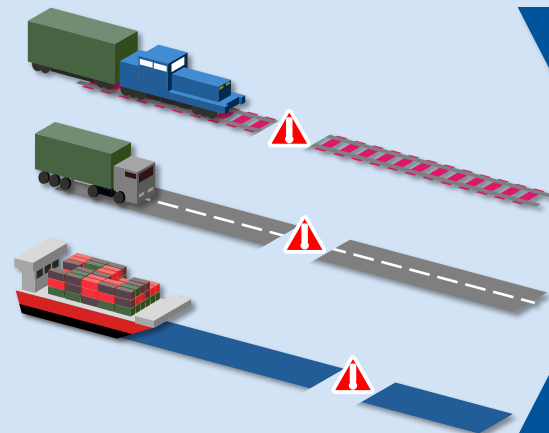
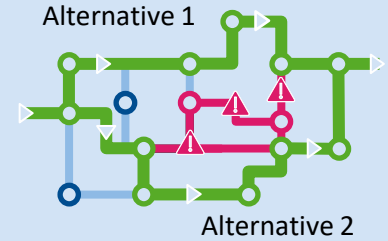
Cost reduction



Emission decrease



Identification of alternative routes



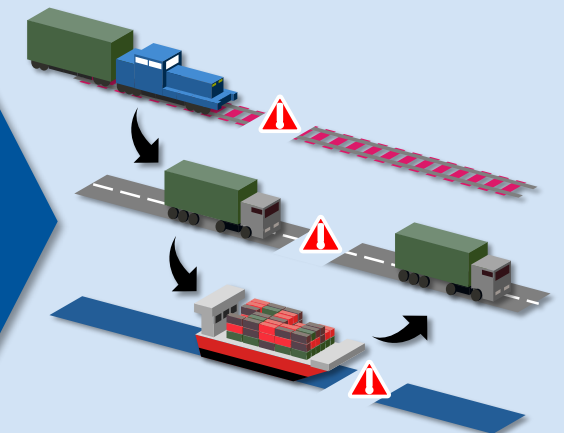
Real-time data

Intelligent planning

Collaborative platform

Local actors

Capacity distribution



Fraunhofer AUSTRIA



HANKEN

4PL Intermodal

PTV GROUP



UNION INTERNATIONALE POUR LE TRANSPORT COMBINE RAIL-ROUTE



alice



INFORM

Alliance for Logistics Innovation through Collaboration in Europe



TRANSPOREON transforming transportation



CargoBeamer®

4FLOW Your supply chain solution



Huoltovarmuuskeskus Försörjningsberedskapscentralen National Emergency Supply Agency



Funded by the European Union



ReMuNet pursues a multi-stage approach to increase the resilience of multimodal freight transport

Understanding
of multimodal transport networks and description of the effects of disruptive events

Calculation
of multimodal transport route options against the background of disruptive events

Enabling
of collaborative synchronomodal freight transport

Piloting and improvement
of system-optimising transport and route allocation

European transport networks

Reference model

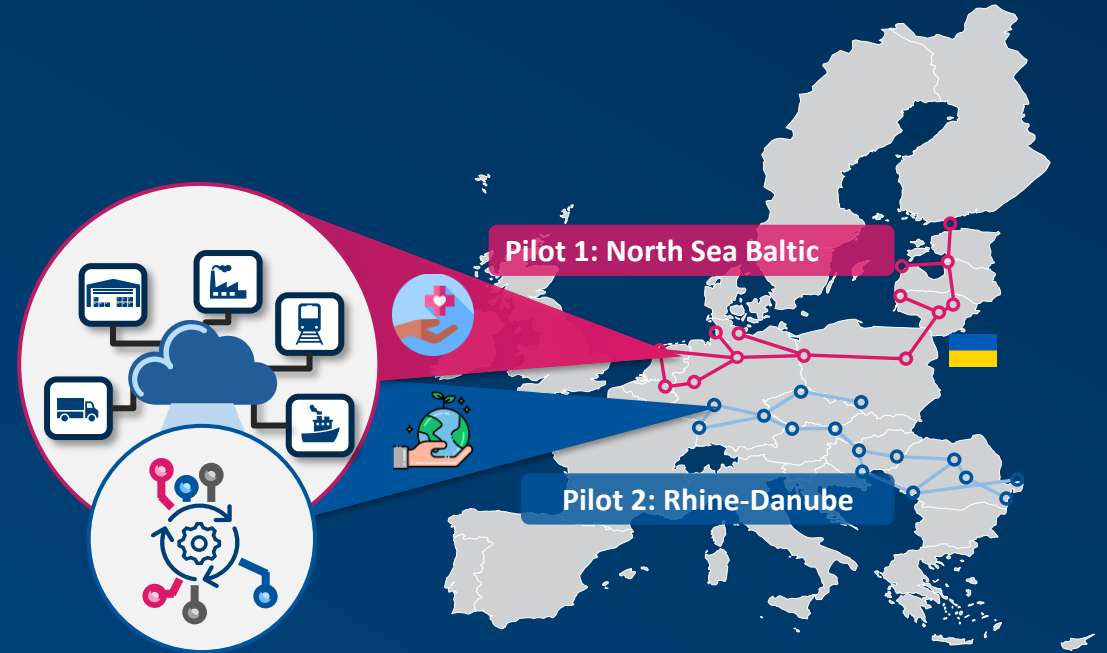
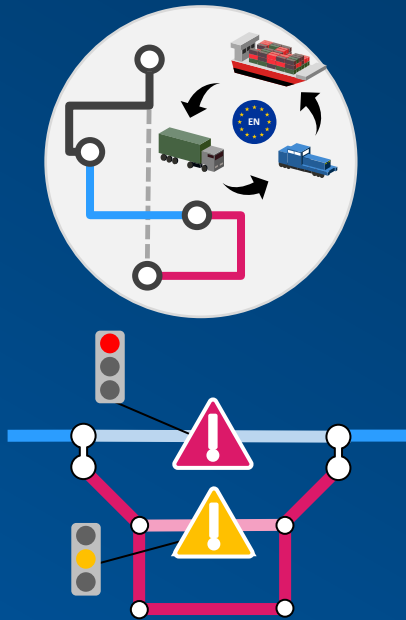
Industrial application

- WP 1**
- ▶ ReMuNet ontology
 - ▶ Typology of disruptive events

- WP 2**
- ▶ Replication of the infrastructure and its utilisation
 - ▶ Route planning algorithm

- WP 3**
- ▶ Collaborative platform
- WP 4**
- ▶ Self-learning algorithm

- WP 5**
- ▶ P1: Social use case
- WP 6**
- ▶ P2: Ecological use case



Thank you for your attention!



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